03050103-090

(Rocky Creek)

General Description

Watershed 03050103-090 is located in Chester and Fairfield Counties and consists primarily of ***Rocky Creek*** and its tributaries. The watershed occupies 127,873 acres of the Piedmont region of South Carolina. The predominant soil types consist of an association of the Wilkes-Pacolet-Cecil-Madison series. The erodibility of the soil (K) averages 0.24 and the slope of the terrain averages 10%, with a range of 2-40%. Land use/land cover in the watershed includes: 85.5% forested land, 9.0% agricultural land, 3.2% scrub/shrub land, 1.7% urban land, 0.4% barren land, and 0.2% water.

Rocky Creek originates near the Town of Chester and accepts drainage from Grassy Run Branch, Bull Run Creek, Hooper Creek (Melton Branch), Barbers Creek (McDaniels Branch, Waters Branch), Bull Skin Creek, and Beaverdam Creek. Little Rocky Creek accepts drainage from Shannon Creek and Bell Creek (Stover Creek) before flowing into Rocky Creek. Hodges Branch and Turkey Branch drain into Rocky Creek at the base of the watershed. Rocky Creek drains into Cedar Creek Reservoir near the Town of Great Falls. There are a total of 265.3 stream miles and 269.4 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
CW-088	S/W	FW	GRASSY RUN BRANCH AT SC 72 1.6 MI NE OF CHESTER
CW-002	P/W/BIO	FW	ROCKY CREEK AT S-12-335 3.5 MI E OF CHESTER
CW-067	BIO	FW	LITTLE ROCKY CREEK AT S-12-144
CW-691	BIO	FW	BEAVERDAM CREEK AT S-12-555
CW-236	W/INT	FW	ROCKY CREEK AT S-12-138
CW-175	S/W	FW	CEDAR CREEK RESERVOIR/ROCKY CREEK ARMAT S-12-141 SE OF GREAT FALLS

Grassy Run Branch (CW-088) - Aquatic life uses are not supported due to dissolved oxygen excursions. There is also a significant increasing trend in five-day biochemical oxygen demand. There is a significant decreasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions.

Rocky Creek – There are two SCDHEC monitoring sites along Rocky Creek**.** Recreational uses are not supported at either site due to fecal coliform bacteria excursions. There is a significant decreasing trend in pH at both sites. At the upstream site ***(CW-002)***, aquatic life uses are not supported based on macroinvertebrate community data and occurrences of copper in excess of the aquatic life acute criterion. There is also a significant decreasing trend in dissolved oxygen concentration. At the downstream site ***(CW-236)***, aquatic life uses are fully supported.

Little Rocky Creek (CW-067) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Beaverdam Creek (CW-691) – Aquatic life uses are partially supported based on macroinvertebrate community data.

Rocky Creek Arm of Cedar Creek Reservoir (CW-175) - Aquatic life uses are not supported due to dissolved oxygen, turbidity, and total phosphorus excursions. There is a significant decreasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
ROCKY CREEK CITY OF CHESTER/ROCKY CREEK PLT PIPE #: 001 FLOW: 1.36 PIPE #: 001 FLOW: 2.0 (PROPOSED)	SC0036056 MAJOR DOMESTIC
ROCKY CREEK SPRINGS INDUSTRIES/KATHERINE PLANT PIPE #: 001 FLOW: M/R	SCG250041 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
WILLAMETTE INDUSTRIES INDUSTRIAL	123301-1601 (IWP-188) ACTIVE
CHESTER COUNTY C&D LANDFILL CONSTRUCTION	121001-1101 (DWP-081) CLOSED
CHESTER COUNTY C&D LANDFILL CONSTRUCTION	121003-1201 ACTIVE
CHESTER COUNTY TRANSFER STA. MUNICIPAL	121001-6001 --------

Growth Potential

This watershed contains portions of the towns of Richburg, Eureka Mill and Great Falls, and the City of Chester. Growth extends north and east of Chester, along York Road and S.C. 72. Industrial, residential, and commercial growth has occurred in the Richburg area, associated with the I-77/S.C. 9 interchange and the presence of utilities in that area. Water service is available in the Chester area, along S.C. Hwy. 9 to Fort Lawn, and down S.C. Hwy. 99 to Great Falls. Sewer service exists in the Chester, Great Falls, and Richburg areas. The presence of I-77 will continue to have an impact on future growth in the watershed, especially in the Richburg area. The County's other important transportation artery, S.C.

Hwy.9, has now been widened to four lanes between Chester and Fort Lawn. The remainder of the watershed is rural and should see scattered development in the future.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by EPA for ***Grassy Run Branch*** water quality monitoring site CW-088 to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The primary sources of fecal coliform to the stream were determined to be runoff from urban areas in the watershed. The TMDL states that an 86% reduction in fecal coliform loading from urban sources is necessary for the stream to meet the recreational use standard.

A TMDL was also developed by SCDHEC and approved by EPA for ***Rocky Creek*** water quality monitoring sites CW-002, CW-236, and CW-175 to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The primary sources of fecal coliform to the stream were determined to be runoff from urban and agricultural areas in the watershed, including failing septic systems, leaking and overflowing sanitary sewers, and cattle-in-streams. The TMDL states that an 83% reduction in fecal coliform loading from urban and agricultural sources is necessary for the stream to meet the recreational use standard. For more detailed information on TMDLs, please visit the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".

Special Projects

TMDL Implementation for Rocky Creek

Waters in the targeted areas violated the state water quality standard for fecal coliform bacteria, and were placed on the 303(d) list. A Total Maximum Daily Load (TMDL) was then developed. The goal of the cooperating partners for this project (Research Planning, Inc., and Clemson Extension Service) is to implement the TMDL using Best Management Practices (BMPs) on agricultural and rural sites. Since the project commenced in early 2004, three agricultural landowners have decided to participate in the cost-sharing program, and six additional landowners are considering participation. As of October 2004, BMPs installed and/or in progress include: a feeding shed where manure will be collected and stored properly, a composter/waste storage facility, water lines to additional troughs, 2.5 acres of riparian herbaceous cover planted, 2885 ft. of fencing (for stream protection), 7 tons of crusher run in heavy use areas, and a solar powered well. Outreach activities that have been implemented include a Home-A-Syst workshop led by Clemson Extension. Septic tank system owners (members of approximately 15 households in attendance) were made aware of potential impacts from leaking/overflowing septic systems in need of repair. A tour of farms where BMPs that were implemented under a previous 319 funded project were showcased. The farm tour was very successful, with over 60 farmers participating. Interest in the cost-sharing aspects of the program for Rocky Creek rose after the tour.

NPS Assessment and TMDL for Phosphorus in the Catawba River Basin

In June 2003, researchers at the University of South Carolina completed a §319-funded study of nutrient loading in the lower Catawba River basin using the WARMF (Watershed Analysis Risk Management Framework) water quality model. The model estimated that the lower Catawba (defined as the Catawba River downstream of the Lake Wylie dam and all tributaries through Lake Wateree) received an average load of 2100 kg/day of phosphorus for the 1996-1998 study period. Of this load, 46% was from point sources, 39% was from nonpoint sources, and 15% was from Lake Wylie. SCDHEC is currently using the WARMF model, which is being updated through 2003, to further refine nonpoint sources, to determine loading rates that would allow the reservoirs to meet the phosphorus standard (TMDLs), and to calculate wasteload allocations for phosphorus for the impaired reservoirs. Cooperators in the study include Catawba River stakeholders, North Carolina DWQ, and EPA Region 4.

Sustainable Environment for Quality of Life

Sustainable Environment for Quality of Life (SEQL) is a USEPA program, which addresses regional environmental planning through the Centralina Council of Governments and the Catawba Regional Council of Governments. SEQL is intended to assist local governments in the 15-county Charlotte/Gastonia/Rock Hill region to work together to promote economic growth while protecting the environment. Multiple air and water quality issues are analyzed simultaneously, while addressing transportation, water, land use, energy use, population growth and economic development. The Department has supported the program by providing air and water quality information. More information about SEQL is available at the following website: http://centralina.org/seql/background.htm